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PCT/GB 2003 / 001044
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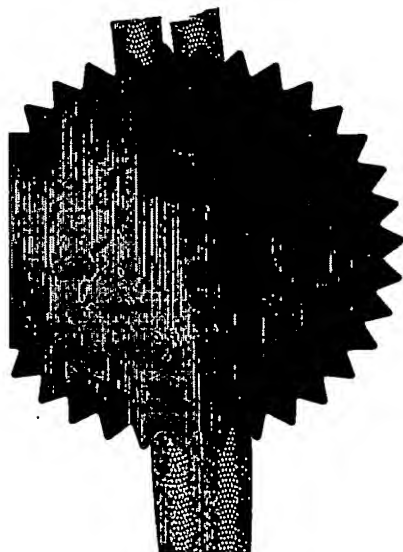
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Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

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Cardiff Road
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1. Your reference

Niagara 2

2. Patent application number

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0218655.9

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3. Full name, address and postcode of the or of each applicant *(underline all surnames)*Robert McBride Limited
Middleton Way
Middleton
Manchester M24 4DPPatents ADP number *(if you know it)*

6569859001

If the applicant is a corporate body, give the country/state of its incorporation

England

4. Title of the invention

Dispenser

5. Name of your agent *(if you have one)*

"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

Ipca Consulting Limited
Northpoint House
52 High Street
Knaphill
Surrey GU21 2PYPatents ADP number *(if you know it)*

7423692002

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and *(if you know it)* the or each application number

Country

Priority application number
*(if you know it)*Date of filing
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
*(day / month / year)*8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer 'Yes' if:*

- a) any applicant named in part 3 is not an inventor, or
 - b) there is an inventor who is not named as an applicant, or
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Continuation sheets of this form 0

Description 9

Claim(s) 3

Abstract 0

Drawing(s) 4 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/We request the grant of a patent on the basis of this application.

Signature

Andrew Harris

Date

08.08.2002

12. Name and daytime telephone number of person to contact in the United Kingdom

Andrew Harris 01483 489818

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DISPENSER

Title of the Invention

This invention relates to a dispenser and, in particular, to a dispenser for dispensing active substances into a toilet bowl.

Background to the Invention

In our pending International Patent Application No. PCT/GB00/02552 we describe and claim a dispenser for releasing discrete doses of cleaning and perfuming substance into a toilet bowl, when the toilet is flushed. The dispenser described is one of a number of devices (commonly referred to as 'liquid rimsticks') arranged to be suspended from the rim of the toilet bowl, in the path of the flush water. The active substances are embodied in a liquid or semi-liquid which is stored in a reservoir forming part of the dispenser. This liquid is drawn from the reservoir when the toilet is flushed and released, with the flush water, into the toilet bowl.

It is felt that consumers might benefit if liquid rimstick-type dispensers were able to dispense a wider variety of active substances. One example of a further such substance is bleach. Dispensing bleach, however, from a liquid rimstick-type device presents a number of problems. By way of example, liquid bleaches present particular health and safety issues which, in turn, necessitate detailed labelling requirements. Further, commonly available bleaches tend to attack the clear plastics from which liquid rimstick reservoirs are made, and render the same opaque. This, in turn, renders the product unacceptable to consumers.

It is an object of this invention to provide a dispenser of the liquid rimstick type, and/or a method of adapting a dispenser of the liquid rimstick type, so as to dispense additional active components whilst addressing the problems mentioned above; or which will at least provide a novel and useful choice.

Summary of the Invention

Accordingly, in one aspect, the invention provides a dispenser of the liquid rimstick type having a reservoir for liquid active substance, and a flow controller constructed and arranged to dispense one or more doses of said active substance from said reservoir when a toilet to which said dispenser is fitted, is flushed; said dispenser being characterised by having a further source of active substance, said further source of active substance being constructed and arranged so that, in use when said dispenser is fitted to a toilet bowl and the toilet is flushed, active substance from said further source of active substance is exposed to the flush water.

Preferably the active substance in said further source of active substance is, at least initially, non-liquid.

Preferably said further source of active substance is substantially sandwiched between said reservoir and said flow controller. As one alternative, said further source of active substance is located within, on or about said flow controller.

Conveniently said reservoir is provided in the form of a bottle having an outlet neck which bottle, in use, is inverted and said neck engaged with said flow controller, said further source of active substance preferably being arranged about, or adjacent to, said neck. More preferably said further source of active substance includes a member which, at least initially, serves as a closure for said reservoir.

Preferably said further source of active substance comprises a member retaining at least one solid block of active-containing substance, said active-containing substance being dissolvable in water or physically degradable under the influence of flush water.

Preferably said active-containing substance contains active components selected from a group which includes halogen release agents, bleaches, Quaternary Ammonium salt

based disinfectants, bleach/activator combinations, peroxides, biocides and water softeners.

In a second aspect the invention provides a method of adapting a dispenser of the liquid rimstick type having a reservoir for liquid active substance, and a flow controller constructed and arranged to release one or more doses of said active substance from said reservoir when a toilet to which said dispenser is fitted, is flushed; said method including adding and positioning a further source of active substance to said dispenser such that, in use when said dispenser is fitted to a toilet bowl, active substance contained in said further source of active substance is exposed to flush water from said toilet.

Preferably said method includes providing said further active substance in a form which is initially solid but dissolvable in water and/or degradable under the action of said flush water.

Conveniently said reservoir is provided in the form of a bottle having an outlet neck which bottle, in use, is inverted and said neck engaged with said flow controller, said method including arranging said further source of active substance about, or adjacent to, said neck.

In a third aspect, the invention provides a refill unit for dispenser of the liquid rimstick type having a reservoir for liquid active substance, and a flow controller constructed and arranged to dispense one or more doses of said active substance from said reservoir when a toilet to which said dispenser is fitted, is flushed; said refill unit comprising said reservoir with liquid active substance therein, and a further source of active substance, said further source of active substance being attached to said reservoir and being constructed and arranged for simultaneous mounting with said reservoir, on said flow controller.

Preferably said further source of active substance is configured to release its contents independently of the release of active substance from said reservoir.

Preferably part of said further source of active substance serves as a closure for said reservoir.

Preferably the active substance in said further source of active substance, is initially solid.

Many variations in the way the present invention can be performed will present themselves to those skilled in the art. The description which follows is intended as an illustration only of one means of performing the invention and the lack of description of variants or equivalents should not be regarded as limiting. Wherever possible, a description of a specific element should be deemed to include any and all equivalents thereof whether in existence now or in the future. The scope of the invention should be limited by the appended claims alone.

Brief Description of the Drawings

The various aspects of the Invention, as embodied in a working example, will now be described with reference to the accompanying drawing in which:

Fig 1: shows a front view of a known form of liquid rimstick dispenser;

Fig 2: shows a side view of the dispenser shown in Fig 1;

Fig 3: shows a view similar to Fig 1 but with the dispenser adapted according to the invention;

Fig 4 : shows a side view of the dispenser shown in Fig 3;

- Fig 5: shows an exploded isometric view of the components forming the dispenser shown in Figs 3 and 4;
- Fig 6: shows a view similar to Fig 3 but of an alternative form of dispenser embodying the invention; and
- Fig 7: shows a side view of the dispenser shown in Fig 6.

Detailed Description of Working Embodiment

The present invention provides a variation or adaption of a liquid rimstick toilet dispenser. Such a dispenser is shown at 10 in Figs 1 and 2 and comprises a reservoir 11 in which liquid active toilet treatment substances are contained, and a flow controller 12 which lies in the path of the toilet flush water when the dispenser is mounted on a toilet bowl, the flow controller 12 causing one or more doses of active liquid from the reservoir 11 to be released each time the toilet is flushed. A suspension hook 13 is provided to allow the device 10 to be suspended from the inner edge of a toilet bowl rim.

The precise form of the dispenser 10 does not form part of this invention. It could, for example, take the form described in our International Patent Application published under No. WO 01/02653, the contents of which are incorporated herein by way of reference.

In accordance with the invention, a rimstick dispenser is adapted or enhanced by the addition of a further source 15 (Figs 3, 4 & 5) of active substance. The active components in this further source 15 will typically provide a cleaning, disinfecting, perfuming and/or de-odorising action to the toilet bowl and thus typically contribute to, or enhance, the action of the liquid substance in reservoir 11.

As can be seen, the further source 15 is constructed and arranged so that the contents thereof are exposed to the flush water stream of the toilet. In this way, when the toilet is flushed, active substance from the further source 15 dissolves in, or is degraded by, the flush water and can then be entrained in the flush stream and conveyed into the toilet bowl.

In liquid rimstick dispensers, the reservoir 11 is typically in the form of a necked bottle which, when used, is inverted and clipped into the flow controller 12. In giving effect to the present invention, we have found it particularly advantageous (but by no means essential) to provide the further source 15 in a form which affixes to, or adjacent to, the outlet neck 17 (Fig 5) of the reservoir 11. To this end, the further source 15 is shown in Fig 5 in the form of a shallow tray-like member having a central sleeve 16 sized to receive the neck 17 of the reservoir 11. Initially the bottom 18 of the sleeve is closed by a frangible membrane which serves as a closure for the reservoir 11 before the reservoir is clipped into the flow controller 12. However, when the reservoir 11 with attached further source 15 is clipped into the flow controller 12, this membrane is pierced by upstanding spigot 20 provided in the flow controller in the known manner.

When the unit as described herein is fully functional, the further source 15 is sandwiched between the reservoir and flow controller of the conventional rimstick dispenser, as can be seen from Figs 3 and 4.

The further source 15 preferably contains an active substance in a different form or phase to that of the liquid substance contained in reservoir 11. In the particular form shown herein, the further active substance is provided in the form of solid but dissolvable or degradable blocks 21 which are located in the tray-like member 15. These blocks may contain a variety of active substances, such active substances, in general, being of forms which are unsuitable for direct mixing with the substances contained in reservoir 11. By way of example, the active substances contained in

blocks 21 may be selected from a group which includes (but is not necessarily restricted to) halogen release agents; bleaches (both oxygen and chlorine based); Quaternary Ammonium (Quat) salt based disinfectants; bleach/activator combinations; oxygen release materials including percarbonates, perborates, persulphates etc; biocides; water softeners; acids and alkalis.

The additional active components may, as described herein, be included in solid but dissolvable or degradable components such as blocks 21, or may be provided in the form of pastes or even liquids contained in a separate reservoir to the reservoir 11.

The blocks may be formed in any suitable manner whether known now or developed in the future and may be provided in the form of tablets, extrudates or melts. In common with certain dishwashing and clothes washing tablets, single tablets may include more than one active component. For example, a single tablet might have a layer of bleach on one side and a layer of activator on the other side.

Furthermore, more than one tablet might be provided, the combination of tablets serving to release components which could meet in the flush water or toilet bowl water and react. This arrangement could be provided to give, for example, effervescence or a colour change.

Whatever the form, phase or number of the blocks 21, the same may be constructed and arranged to provide continuous emission of one or more fragrances.

The use of the invention is as follows. Upon the toilet being flushed, the components 11 and 12 will not only operate in the conventional manner and dispense a measured dose of liquid active substance from reservoir 11 but also, flush water will collect in tray member 15 and cause blocks 21 to dissolve or degrade, thus releasing the active substances contained in blocks 21. Successive flushes will cause these active

substances to be entrained in the flush water stream and, in turn, released into the toilet bowl to add to the action effected by the liquid active substance from reservoir 11.

The precise form of member 15 may be varied to suit particular rimstick configurations and particular toilet rim configurations. Further, slots 23 may be provided in the lower walls of the member 15 to enhance the release of active substances from the tray. Still further, vanes or baffles 25 may be provided to assist in directing flush water into the tray.

In a further aspect, the invention provides a refill unit for a liquid rimstick dispenser device in which the reservoir 11 and further source 15 are provided as a unit. When provided as a refill unit, the membrane covering the lower end 18 of the sleeve 16 in tray 15, serves as a closure for the reservoir 11. In this way the liquid and solid active substances are kept apart during storage and display, yet are mounted into the flow controller as one and, although the sources 11 and 15 are configured to release their contents independently of one another, each contributes to the overall efficacy of the rimstick dispenser.

It will be appreciated from the above description that the arrangement depicted in Figs 3 to 5 is particularly suited to refillable rimstick units. However, there exists (or is perceived to exist) a significant market for a fully disposable unit. To this end, we have devised a further form of fully disposable rimstick unit incorporating the invention.

Referring to Figs 6 and 7, a rimstick unit 10 is again shown having a reservoir 11 and a flow controller 12. In this embodiment, however, the further source of active substance is not provided in a tray sandwiched between the components 11 and 12, but as tablets 30 moulded to fit within the forward part 32 of the flow controller 12. The tablets 30 may have all the variations in composition and purpose as are set out

above in relation to blocks 21.

The flow controller is essentially the same as that described above but without the outlet grills in the front face thereof as depicted in Figs 1 and 3. Thus, as flush water enters the rimstick unit from behind, part of the flush water flows forward into the forward part 32 of the unit, and collects about the tablets 30. The action of the water degrades or dissolves the tablets, which then release the active substance(s) contained therein. This creates a pool of water in the part 32 of the flow controller, heavily concentrated with the active substance(s). When the toilet is flushed thereafter, part of this concentrated pool is displaced from the flow controller and released into the toilet bowl.

It will thus be appreciated that the invention, at least in the case of the working embodiments herein described, provides a method of substantially enhancing the efficacy of a liquid rimstick device by adding a further source of active substance(s), whilst avoiding the problems or potential problems of combining active substances which are generally incompatible.

Claims

- 1) A dispenser of the liquid rimstick type having a reservoir for liquid active substance, and a flow controller constructed and arranged to dispense one or more doses of said active substance from said reservoir when a toilet to which said dispenser is fitted, is flushed; said dispenser being characterised by having a further source of active substance, said further source of active substance being constructed and arranged so that, in use when said dispenser is fitted to a toilet bowl and the toilet is flushed, active substance from said further source of active substance is exposed to the flush water.
- 2) A dispenser as claimed in claim 1 wherein the active substance in said further source of active substance is, at least initially, non-liquid.
- 3) A dispenser as claimed in claim 1 or claim 2 wherein said further source of active substance is substantially sandwiched between said reservoir and said flow controller.
- 4) A dispenser as claimed in claim 1 or claim 2 wherein said further source of active substance is located within, on or about said flow controller.
- 5) A dispenser as claimed in any one of claims 1 to 3 wherein said reservoir is provided in the form of a bottle having an outlet neck which bottle, in use, is inverted and said neck engaged with said flow controller, said further source of active substance being arranged about, or adjacent to, said neck.
- 6) A dispenser as claimed in claim 5 wherein said further source of active substance includes a member which, at least initially, serves as a closure for said reservoir.

- 7) A dispenser as claimed in any one of claims 1 to 6 wherein said further source of active substance includes at least one solid block of active-containing substance, said active-containing substance being dissolvable in water or physically degradable under the influence of flush water.
- 8) A dispenser as claimed in any one of the preceding claims wherein said further source of active substance includes one or more active components selected from a group which includes halogen release agents, bleaches, Quaternary Ammonium salt based disinfectants, bleach/activator combinations, oxygen release materials, biocides and water softeners.
- 9) A method of adapting a dispenser of the liquid rimstick type having a reservoir for liquid active substance, and a flow controller constructed and arranged to release one or more doses of said active substance from said reservoir when a toilet to which said dispenser is fitted, is flushed; said method including adding and positioning a further source of active substance to said dispenser such that, in use when said dispenser is fitted to a toilet bowl, active substance contained in said further source of active substance is exposed to flush water from said toilet.
- 10) A method as claimed in claim 9 including providing said further active substance in a form which is initially solid but dissolvable or degradable under the action of said flush water.
- 11) A method as claimed in claim 9 or claim 10 wherein said reservoir is provided in the form of a bottle having an outlet neck which bottle, in use, is inverted and said neck engaged with said flow controller, said method including arranging said further source of active substance about, or adjacent to, said neck.

- 12) A refill unit for dispenser of the liquid rimstick type having a reservoir for liquid active substance, and a flow controller constructed and arranged to dispense one or more doses of said active substance from said reservoir when a toilet to which said dispenser is fitted, is flushed; said refill unit comprising said reservoir with liquid active substance therein, and a further source of active substance, said further source of active substance being attached to said reservoir and being constructed and arranged for simultaneous mounting with said reservoir, on said flow controller.
- 13) A refill unit as claimed in claim 12 wherein said further source of active substance is configured to release it's contents independently of the release of active substance from said reservoir.
- 14) A refill unit as claimed in claim 11 or claim 12 wherein part of said further source of active substance serves as a closure for said reservoir.
- 15) A refill unit as claimed in any one of claims 12 to 14 wherein the active substance in said further source of active substance, is initially solid.
- 16) A dispenser of the liquid rimstick type when constructed arranged and operable substantially as herein described with reference to Figs 3,4 & 5 of the accompanying drawings.
- 17) A dispenser of the liquid rimstick type when constructed arranged and operable substantially as herein described with reference to Figs 6 & 7 of the accompanying drawings.

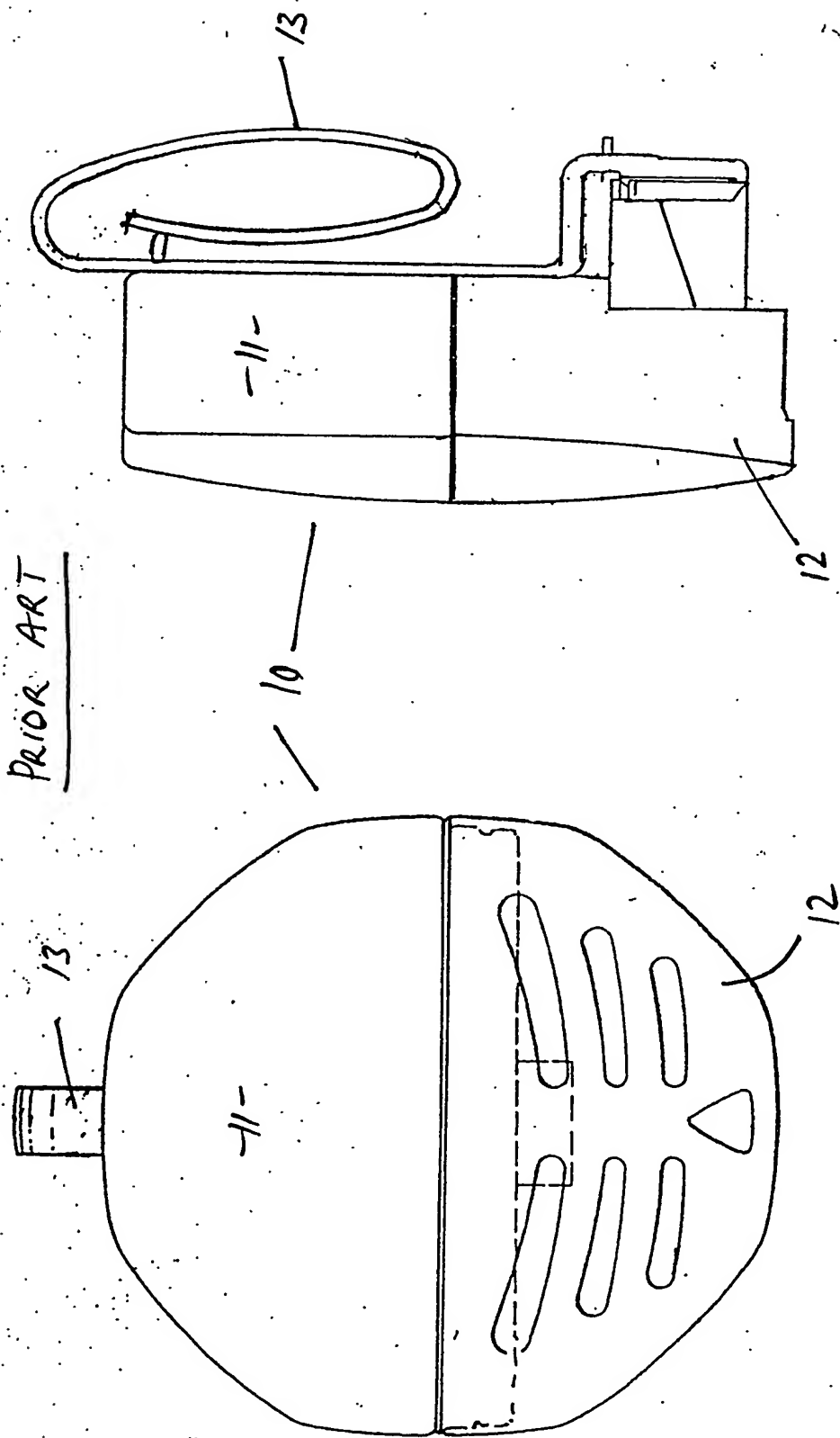


FIG. 1

FIG. 2

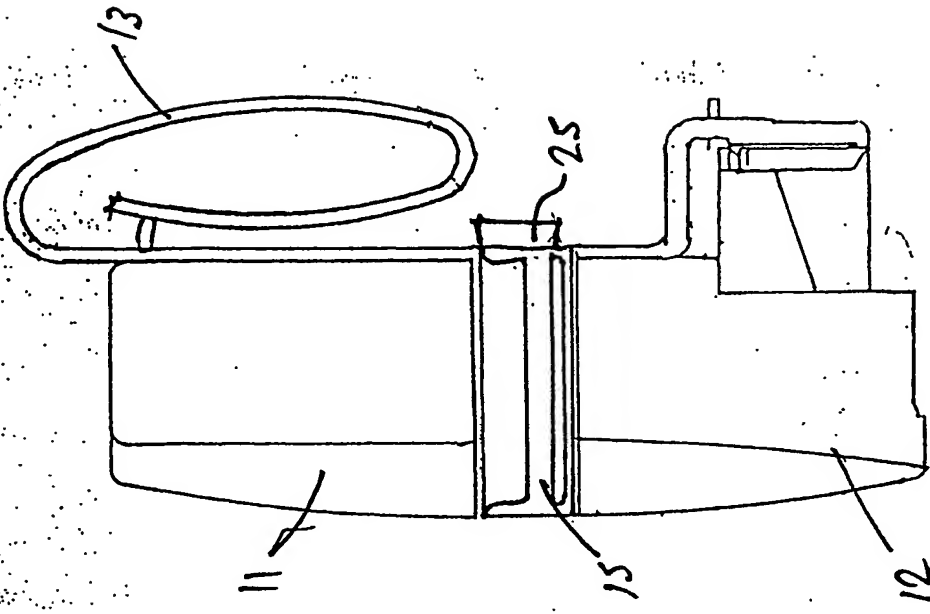


FIG. 4

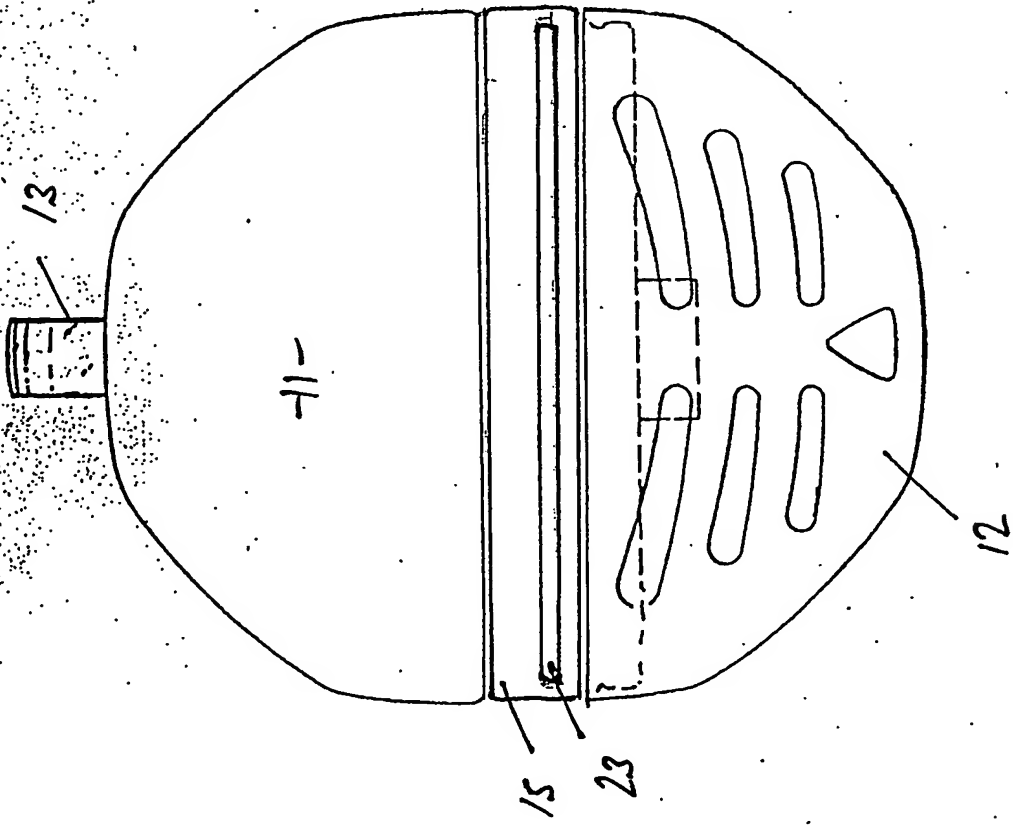


FIG. 3

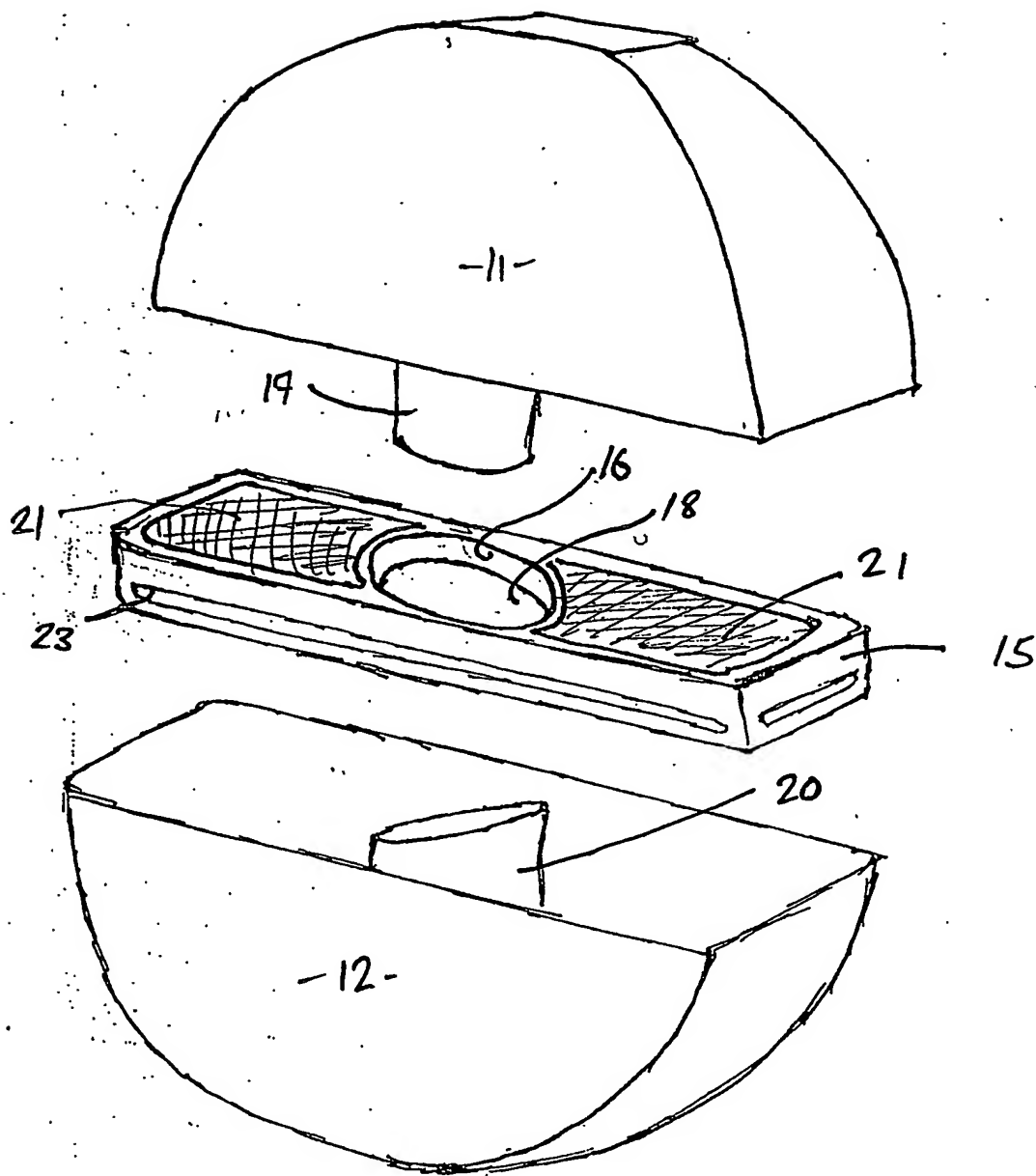


FIG. 5

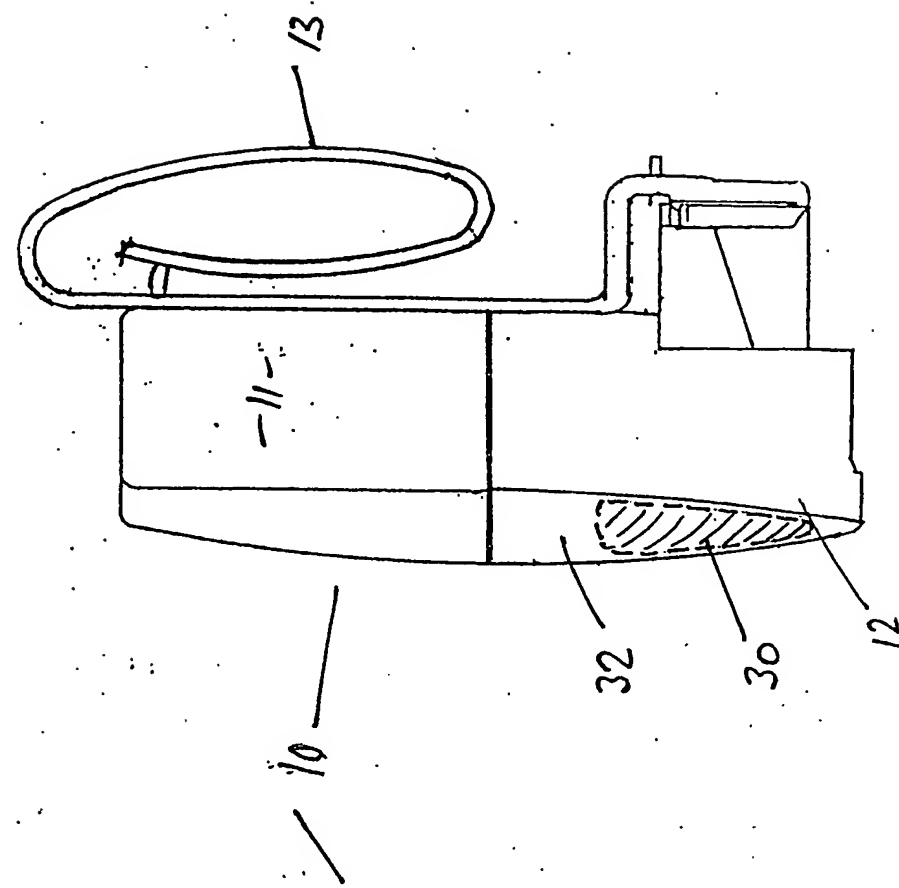


FIG. 6

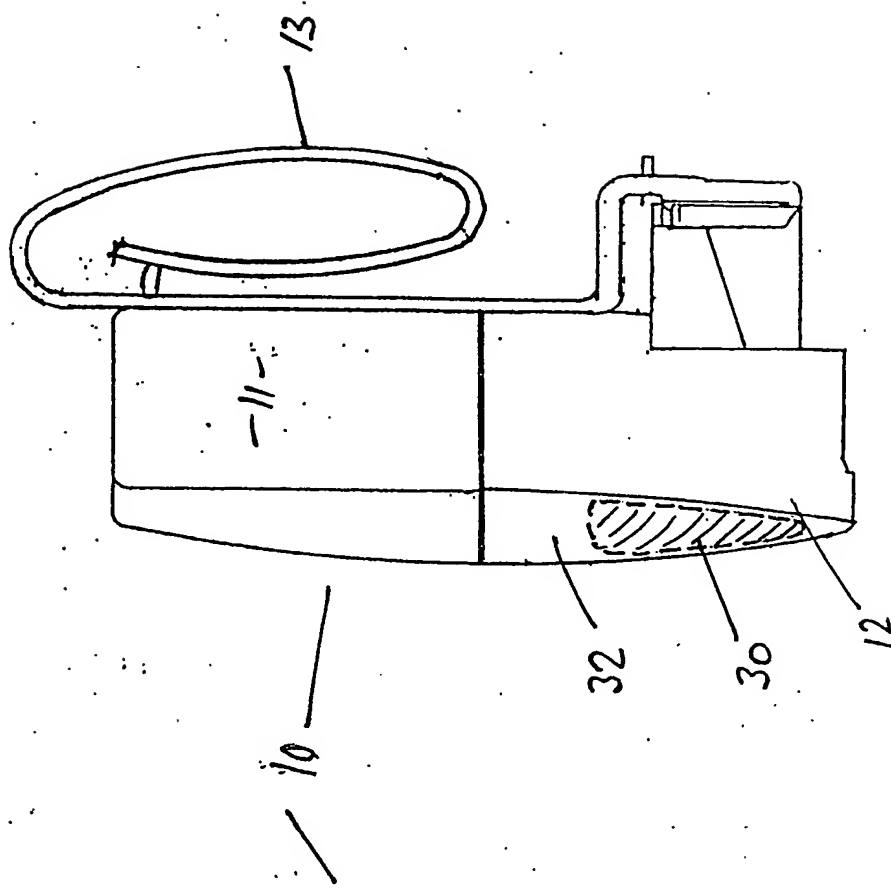


FIG. 7

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